

IN THE CLAIMS

1. (currently amended) A core plate assembly for a nuclear reactor, the reactor comprising a plurality of large control rods, a plurality of cruciform shaped control rod guide tubes, and a plurality of fuel bundles having lower tie plates, said core plate assembly comprising:

a flat plate;

a plurality of support beams, said flat plate positioned on top of said support beams;

a plurality of control rod guide tube openings, each said guide tube opening sized to receive a control rod guide tube, said control rod guide tube openings arranged in staggered rows, said guide tube openings having a cruciform shape and comprising four slots extending radially from a central portion at right angles to each other, said slots defining four fuel bundle receiving areas;

a plurality of fuel supports extending through said flat plate, each said fuel support comprising:

a coolant flow inlet, said coolant flow inlet positioned adjacent a support beam;

a coolant flow outlet sized to receive a lower tie plate of a fuel bundle, said coolant flow outlet positioned in a fuel bundle receiving area; and

a coolant flow bore extending between said coolant flow inlet and said coolant flow outlet, said coolant flow inlet offset from said coolant flow outlet so that a centerline of said coolant flow inlet is parallel to a centerline of said coolant flow outlet.

2. (canceled)

3. (original) A core plate assembly in accordance with Claim 1 wherein each said coolant flow inlet comprises an orifice plate.

4. (canceled)

5. (currently amended) A core plate assembly in accordance with Claim [[2]] 1 wherein each said fuel bundle receiving area comprises four fuel supports.

6. (currently amended) A core plate assembly in accordance with Claim [[2]] 1 wherein each said fuel bundle receiving area comprises one fuel support.

7. (currently amended) A core plate assembly in accordance with Claim [[2]] 1 wherein each fuel support further comprises:

four coolant flow inlets;

four coolant flow outlets sized to receive a lower tie plate of a fuel bundle; and

four coolant flow bores, each flow bore extending between a corresponding coolant flow inlet and a corresponding coolant flow outlet, said coolant flow inlets offset from said corresponding coolant flow outlets so that a centerline of said coolant flow inlet is parallel to a centerline of said corresponding coolant flow outlet, said coolant flow inlets positioned adjacent a support beam, and said coolant flow outlets positioned in a fuel bundle receiving area.

8. (original) A core plate assembly in accordance with Claim 7 wherein each said fuel bundle receiving area comprises one fuel support.

9. (currently amended)) A core for a nuclear reactor comprising:

a plurality of fuel bundles, each fuel bundle comprising a lower tie plate;

a plurality of cruciform shaped large control rods;

a plurality of cruciform shaped control rod guide tubes; and

a core plate assembly comprising:

a flat plate;

a plurality of support beams, said flat plate positioned on top of said support beams;

a plurality of control rod guide tube openings, each said guide tube opening sized to receive a control rod guide tube, said control rod guide tube openings arranged in staggered rows, said guide tube openings having a cruciform shape and comprising four slots extending radially from a central portion at right angles to each other, said slots defining four fuel bundle receiving areas; and

a plurality of fuel supports extending through said flat plate, each said fuel support comprising:

a coolant flow inlet, said coolant flow inlet positioned adjacent a support beam;

a coolant flow outlet sized to receive a lower tie plate of a fuel bundle, said coolant flow outlet positioned in a fuel bundle receiving area; and

a coolant flow bore extending between said coolant flow inlet and said coolant flow outlet, said coolant flow inlet offset from said coolant flow outlet so that a centerline of said coolant flow inlet is parallel to a centerline of said coolant flow outlet.

10. (canceled)

11. (original) A core in accordance with Claim 9 wherein each said coolant flow inlet comprises an orifice plate.

12. (canceled)

13. (currently amended) A core in accordance with Claim [[10]] 9 wherein each said fuel bundle receiving area comprises four fuel supports.

14. (currently amended) A core in accordance with Claim [[10]] 9 wherein each said fuel bundle receiving area comprises one fuel support.

15. (currently amended) A core in accordance with Claim [[10]] 9 wherein each fuel support further comprises:

four coolant flow inlets;

four coolant flow outlets sized to receive a lower tie plate of a fuel bundle; and

four coolant flow bores, each flow bore extending between a corresponding coolant flow inlet and a corresponding coolant flow outlet, said coolant flow inlets offset from said corresponding coolant flow outlets so that a centerline of said coolant flow inlet is parallel to a centerline of said corresponding coolant flow outlet, said coolant flow inlets positioned adjacent a support beam, and said coolant flow outlets positioned in a fuel bundle receiving area.

16. (original) A core in accordance with Claim 15 wherein each said fuel bundle receiving area comprises one fuel support.